PB81-153819

Evaluation of the SCATPAC Device

(U.S.) Environmental Protection Agency
Ann Arbor, MI

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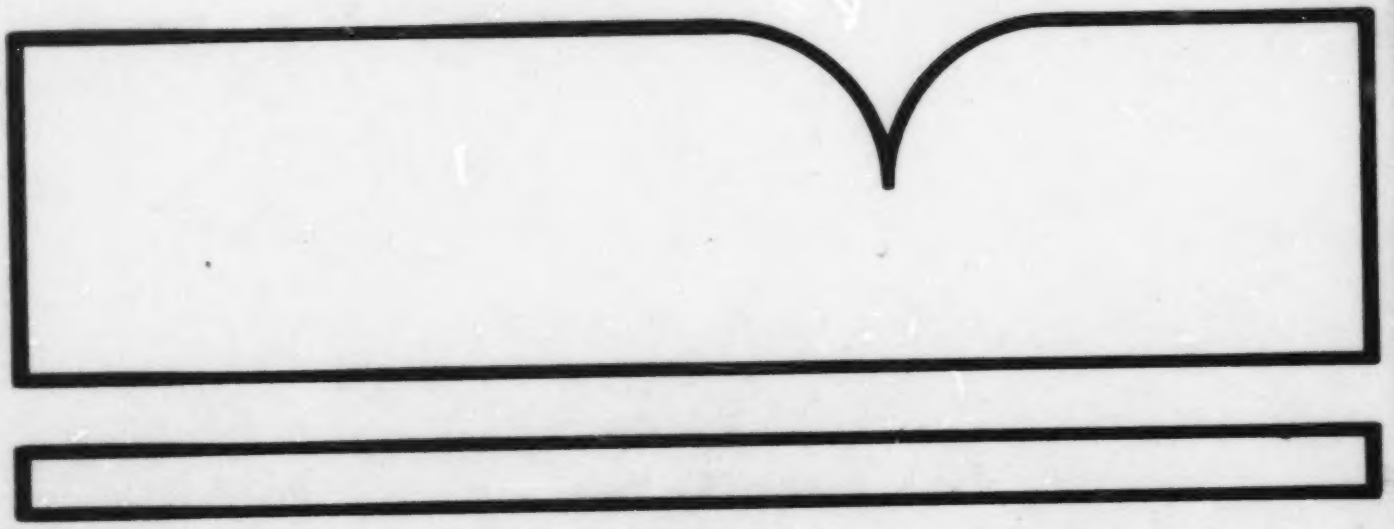

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July 1973

Emission Control Technology Division
Office of Air and Water Programs
Environmental Protection Agency

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16. ABSTRACT

The ECT Division was contacted by a representative of Cedar Rapids Engineering Company, of Cedar Rapids, Iowa, concerning their retrofit device for automobiles called SCATPAC. After being shown test results performed by Olson Laboratories which showed significant reductions of CO, HC, and NOx on a vehicle with the device installed (as compared to baseline), the ECTD agreed to perform testing of the device on an EPA owned vehicle.

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Background

The ECT Division was contacted by a representative of Cedar Rapids Engineering Company, of Cedar Rapids, Iowa, concerning their retrofit device for automobiles called SCATPAC. After being shown test results performed by Olson Laboratories which showed significant reductions of CO, HC, and NOx on a vehicle with the device installed (as compared to baseline), the ECTD agreed to perform testing of the device on an EPA owned vehicle.

Device Tested

SCATPAC is a vacuum vapor induction system which is attached to the PCV line. Manifold vacuum draws air through a liquid solution of undisclosed chemicals into the base of the carburetor. Vapors from the solution are thus introduced into the manifold. The device comes with all necessary components for the retrofitting to any vehicle with a PCV line and installation time takes less than fifteen minutes.

Test Program

A 1970 Plymouth Valiant 225 CID from the EPA fleet was used for the test program. Four emission tests* were conducted, two without the device and two with the device installed. Before any testing, the vehicle was tuned to the manufacturer's specifications for timing and idle rpm. Idle CO, 1.75%, was not changed. Two tests were then conducted in this stock configuration to be used as the baseline results. The SCATPAC device was then installed and idle CO was adjusted to 1.75% so that the enleanment effect from bleeding the vapors into the PCV line did not influence the emissions (it had dropped to about 1.50%). The vehicle was then tested twice more.

Test Results

The test results are presented in the Appendix of this report, and are summarized below. In addition to emission results, fuel economy was calculated for each test using a carbon balance technique.

*All testing was performed according to the 1975 Federal Test Procedure as outlined in the November 15, 1972, Federal Register for light duty vehicles.

Summary of Test Results
% Decrease from Baseline

HC	2%
CO	-9% (increase)
NOx	11%
MPG	-1% (increase)

Conclusions

The minor increase in carbon monoxide accompanied by a minor decrease in oxides of nitrogen may reflect a change in the overall air/fuel ratio.

APPENDIX

	Test No.	HC gpm	CO gpm	CO_2 gpm	NOx gpm	Fuel Economy mpg
Baseline	16-530	2.07	29.12	357.5	5.44	21.3
	16-531	2.12	29.16	354.1	5.74	21.4
	Avg.	2.10	29.14	355.8	5.59	21.3
SCATPAC	16-542	2.17	33.98	352.1	5.31	21.2
	16-547	1.94	30.17	341.3	4.73	21.8
	Avg.	2.05	32.07	346.7	5.02	21.5